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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,731	06/24/2005	Stephane Taunier	16721-0280 (42528-316590)	9086
23370	7590	08/28/2006	EXAMINER	
JOHN S. PRATT, ESQ KILPATRICK STOCKTON, LLP 1100 PEACHTREE STREET ATLANTA, GA 30309			WONG, EDNA	
			ART UNIT	PAPER NUMBER
			1753	

DATE MAILED: 08/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/540,731

Applicant(s)

TAUNIER ET AL.

Examiner

Edna Wong

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 11-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date August 29, 2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

***Claim Rejections - 35 USC § 112***

Claims 12-15, 17 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 :

line 2, it appears that the "selenium (Se(0))" is the same as the selenium recited in claim 11, line 9. However, it is unclear if it is.

line 2, it appears that the "selenium" is the same as the selenium (Se(0)) recited in claim 12, line 2. However, it is unclear if it is. If it is, then it is suggested that the word -- the -- be inserted after the word "regenerate".

lines 2-3, it appears that the "active form (Se(IV))" is the same as the active form recited in claim 12, line 9. However, it is unclear if it is.

Claim 13

line 3, it appears that the "selenium in the active form (Se(IV))" is the same as the active form recited in claim 12, line 9; or the selenium in the active form (Se(IV)) recited in claim 12, lines 2-3. However, it is unclear if it is.

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Claim 17

line 2, it appears that the "at least one thin film" is the same as that recited in claim 11, lines 7-8. However, it is unclear if it is. If it is, then it is suggested that the word -- the -- be inserted after the word "producing".

Claim 19

line 2, it appears that "for one unit of concentration of copper in the electrolysis bath, about 1.7 units of concentration of active selenium" is further limiting the bath already "comprising" recited in claim 11, lines 4-5. However, it is unclear if it is. If it is, then it is suggested that the word "comprises" be amended to the word -- further comprises --.

line 3, it appears that the "active selenium" is the same as that recited in claim 11, line 4. However, it is unclear if it is.

***Allowable Subject Matter***

The following is a statement of reasons for the indication of allowable subject matter:

Claims 11-20 define over the prior art of record because the prior art does not teach or suggest a method of producing a I-III-VI<sub>y</sub> compound in thin film form by electrochemistry, in which y is close to 2 and VI is an element comprising selenium,

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comprising the steps of (a) providing, (b) applying and (c) regenerating as presently claimed, esp., the step of regenerating the selenium in active form in the electrolysis bath.

The prior art does not contain any language that teaches or suggests the above.

*Nakamura et al.* teaches the electrodeposition of Cu-In-Se films with an aqueous solution containing  $\text{CuCl}_2$ ,  $\text{InCl}_3$  and  $\text{SeO}_2$  (abstract). *Nakamura et al.* do not teach regenerating the selenium in active form in the electrolysis bath.

*Wang et al.* teaches that Se can be re-oxidized to Se(IV) by  $\text{H}_2\text{O}_2$  (abstract).

*Wang et al.* do not teach electrolysis or an electrolysis bath.

Therefore, a person skilled in the art would not have been motivated to adopt the above conditions, and a prima facie case of obviousness cannot be established.

Claims 12-15, 17 and 19 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

### **Citations**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Nakamura et al.** ("Composition Control of Electrodeposited Cu-In-Se layers for Thin Film  $\text{CuInSe}_2$  Preparation", *Solar Energy Materials and Solar Cells*, Vol. 50 (1998), pp. 25-30) is cited to teach the electrodeposition of Cu-In-Se films.

**Wang et al.** ("X-ray Photoelectron Spectroscopic Study of the Adsorption of

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Selenium(IV) and Selenium(VI) in Solution by Sulfhydryl Cotton Fibers", *Fenxi Huaxue* (1982), Vol. 10, No. 7, pp. 409-413) is cited to teach that Se can be re-oxidized to Se(IV) by  $H_2O_2$ .

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edna Wong whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 4:00 pm.

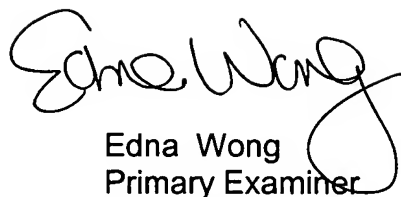
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Edna Wong  
Primary Examiner  
Art Unit 1753

EW  
August 24, 2006